

Consumer inflation during the COVID-19 pandemic

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The coronavirus disease 2019 (COVID-19) outbreak of 2020 created an awareness among financial media, academics, and bankers regarding the challenges of measuring inflation during a pandemic. While consumption patterns were affected by social distancing and lockdown mandates, these sudden changes can introduce biases in inflation measures. In “[Inflation with Covid consumption baskets](#)” (National Bureau of Economic Research, Working Paper 27352, July 2020), author Alberto Cavallo investigates the impact on inflation measures from changes in expenditures patterns because of the 2020 coronavirus pandemic. The author suggests that “the welfare implications are particularly relevant for lower-income households and [also] extend to countries experiencing a divergence [across] sectoral inflation rates” due to price movements. The term “sectoral inflation” refers to the rise in prices occurring in different commercial sectors of a country. For example, the industries under the transportation sector include new vehicles, motor fuels, used cars and trucks, and car and truck rental.

For this research, Cavallo used data collected on debit and credit card transactions from the [Opportunity Insights Tracker](#) (a mechanism that measures the daily change in U.S. consumption patterns). To produce COVID-19 consumer price index (CPI) indexes, he combined real-time expenditure estimates with official inflation measures from January 2019 to May 2020 that were not seasonally adjusted. This data collection was done for several countries, including the United States in which the index data used were produced by the U.S. Bureau of Labor Statistics (BLS). However, Cavallo found that matching data from the Opportunity Insights Tracker to data from various statistical offices from around the world was not always straightforward. For example, some countries that were investigated use a different classification system than the North American Industry Classification System that the United States uses. Thus, to match data from country to country, the author made mathematical assumptions to adjust for the differences in classifications. In addition, he employed Opportunity Insights Tracker data to obtain real-time estimates of expenditures.

From his results, Cavallo discovered that the official CPI from BLS and his calculated COVID-19 CPI were nearly identical in the United States in January and February 2020. But in March of that year (the start of the pandemic's initial outbreak in the United States), the COVID-19 inflation estimate was higher than the official CPI, although both showed deflation. As the pandemic grew, so did the difference between the two inflation rates. The official CPI fell 0.69 percent between March and April compared with the COVID-19 CPI, which decreased only 0.09 percent. Also, in May 2020, the official CPI experienced deflation, whereas the COVID-19 CPI had a positive rate of inflation. Some countries had higher COVID-19 inflation because vastly different price movements occurred across items (and the price divergence happened simultaneously with shifting weights).

Most of the differences between the official inflation measures and the COVID-19 inflation measures were found in spending on food and fuel. One reason for the difference is from expenditure weights that are generally lagged, whereas the COVID-19 CPI used real-time expenditure data. (BLS CPI data, however, are updated every 2 years

for weights.) As Cavallo explains, the “Core CPI” index excludes food and fuel, but the “Covid core” was still higher than the official *All items less food and energy* CPI in May 2020. These differences were due to less expenditure weight on nonenergy transportation sector subcategories, such as public transportation or new and used motor vehicles, with higher deflation.

The author’s findings suggest that during the coronavirus pandemic, the cost of living increased faster than the cost of living of the official CPI. To examine the household impact, the author used data from the 2018 BLS Consumer Expenditure Survey and then updated weights using monthly data of income quintiles from the Opportunity Insights Tracker. The results showed that low-income households spent more on food than on transportation, which exacerbated the difference in the inflation measures during the beginning of the pandemic. Cavallo suggests that low-income households had higher rates of COVID-19 inflation (1.12 percent in May 2020) during the pandemic when compared with higher income households (only 0.57 percent).